

## CLAIMS

1. A liquid fuel supply type fuel cell comprising a solid electrolyte film, an anode electrode disposed on one surface of the solid electrolyte film, a cathode electrode disposed on the other surface of the solid electrolyte film, and a passage for feeding air to the cathode electrode, wherein an separation membrane including a material having an oxygen/nitrogen separation coefficient more than one is disposed between the cathode electrode and the passage.

2. The liquid fuel supply type fuel cell in accordance with claim 1, wherein the separation membrane is disposed to cover the surface of the cathode electrode.

3. The liquid fuel supply type fuel cell in accordance with claim 1 or 2, wherein the separation membrane is a polysiloxane-based polymer film or a polyimide-based polymer film.

4. The liquid fuel supply type fuel cell in accordance with claim 1 or 2, wherein the separation membrane is a polyorganosiloxane-based polymer film.

5. The liquid fuel supply type fuel cell in accordance with one of claims 1 to 4, wherein the separation membrane includes a material having an oxygen/nitrogen separation coefficient equal to or more than two.

6. The liquid fuel supply type fuel cell in accordance with one of claims 1 to 5, wherein the separation membrane includes a material having a water vapor transmission coefficient equal to or more than  $0.6 \times$

$10^{-6} \text{ cm}^3(\text{STP})\text{cm}/\text{cm}^2 \cdot \text{sec} \cdot \text{cmHg}$ .

7. The liquid fuel supply type fuel cell in accordance with one of claims 1 to 6, wherein the liquid fuel supplied to the anode electrode is methanol.